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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,693	09/28/2001	Kenji Watanabe	Q66444	2941

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Washington, DC 20037

EXAMINER

KRUEER, KEVIN R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,693

Applicant(s)

WATANABE ET AL.

Examiner

Kevin R Kruer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,4,17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/30/04 and 6/30/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 17, 2004 has been entered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. Applicant has claimed priority to Japanese Application 2000-302849, filed September 29, 2000.

Drawings

3. The drawings filed 9/28/2001 are accepted.

Information Disclosure Statement

4. The two information disclosure statements filed June 30, 2004 have been considered. Initialed copies of both information disclosure statements are enclosed herein.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 17, 19 (17), 20(17), 21(17), 22 (17), and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claim 17 and the claims that depend therefrom, there is no support in the disclosure for such embodiments wherein said intermediate layer "does not contain titanium oxide." Applicant argues that the limitation finds support in the tables in the specification. While the tables demonstrate that Applicant had envisioned embodiments wherein titanium dioxide was excluded, there is no support in the original disclosure that all titanium oxides may be excluded.

With respect to claim 23, the original disclosure does contain support for laminates comprising a base layer and an antistatic layer having a light transmittance of 40% or more, a haze value of 60% or less when the total thickness of 3mm page 40, last paragraph). However, there is no support for laminates comprising an intermediate layer wherein the laminate has a light

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transmittance of 40% or more, a haze value of 60% or less when the total thickness of 3mm. Furthermore, there is no support in the original specification for the newly claimed endpoints of "62% or more" light transmittance or "8.3% or less" haze. Applicant pointed to example 10 (table 10) to support said amendment, but neither endpoint is supported by said example.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 17, 20, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000-090230A (herein referred to as Watanabe '230) in view of Yoshizumi (US 4,431,764).

Watanabe'230 teaches a flame retardant molded object formed from a composition comprising 100pbw vinyl chloride resin having a chlorination degree of 58-73% and 4-30pbw titanium dioxide (0017). Said layer is taught to have a thickness of 2-12um (0041) and is understood to read on the claimed "base layer." On at least one side of the molded object, a surface layer may be applied. The surface layer (herein relied upon to read on the claimed "intermediate layer") comprises 0-20 titanium dioxide (abstract), a chlorination degree of 50-57% (paragraph 0017 of translation), and a thickness of about 200um or more

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(paragraph 0046). The composition can be used in equipment in which semiconductor parts are made (paragraph 003).

Watanabe'230 does not teach that the molded object may be coated on one side with an antistatic composition. However, Yoshizumi teaches an antistatic coating composition comprising tin oxide (abstract) that is coated onto nonconductive coatings that need antistatic properties (col 1, lines 11+). The tin oxide is dispersed in a binder resin such as vinyl chloride or a thermosetting resin (col 2, lines 41+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the coating taught in Yoshizumi onto the substrate taught in Watanabe'230. The motivation for doing so would have been to provide the substrate with antistatic properties.

With respect to claim 19, Yoshizumi teaches that the binder of the antistatic layer may comprise vinyl chloride, but does not teach the claimed chlorination content of the vinyl chloride binder. However, Watanabe'230 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, and moldability (paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art to control the chlorination degree of the vinyl chloride binder in order to control the laminate's moldability, thermal stability, and fire resistance.

With regard to the claimed intermediate layer's chlorination degree of claim 1 and 2, the range taught in Watanabe'230 (50-57%) is just outside of the claimed range (58-73%). However, the courts have held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not

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overlap but are close enough that one skilled in the art would have expected them to have the same properties (MPEP 2144.05(R-1)). In the present case, the examiner takes the position that one of ordinary skill in the art would expect an intermediate layer having a chlorination degree of 57% (as anticipated by Watanabe'230) to have the same properties as an intermediate layer with a chlorination degree of 58%. Alternatively, Watanabe'230 teaches that the chlorination degree of a polymer will affect is fire resistance, thermal stability, and moldability (paragraph 0015). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the chlorination degree of the intermediate layer taught in Watanabe'230. The motivation for doing so would have been to optimize the laminate's fire resistance, thermal stability, and moldability.

With respect to the claimed intermediate layer's thickness of claim 17, the examiner takes the position that the teaching of Watanabe that the thickness of the intermediate layer may be "about 200um" anticipates the claimed thickness of "less than 200um" since "about 200um" is inclusive of thickness that are slightly less than 200um. With regard to the thickness of claim 22, Watanabe teaches that the thickness of the intermediate layer affects the laminate's chemical resistance (0041). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the thickness of the intermediate layer. The motivation for doing so would have been to obtain the desired chemical resistance while reducing costs.

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10. Claims 1, 2, 17, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP2000-080230A (herein referred to as Watanabe '230) in view of Holley (US 5,508,343).

Watanabe'230 teaches a flame retardant molded object formed from a composition comprising 100pbw vinyl chloride resin having a chlorination degree of 58-73% and 4-30pbw titanium dioxide (0017). Said layer is taught to have a thickness of 2-12um (0041) and is understood to read on the claimed "base layer." On at least one side of the molded object, a surface layer may be applied. The surface layer (herein relied upon to read on the claimed "intermediate layer") comprises 0-20 titanium dioxide (abstract), a chlorination degree of 50-57% (paragraph 0017 of translation), and a thickness of 200um or more (paragraph 0046). The composition can be used in equipment in which semiconductor parts are made (paragraph 003).

Watanabe'230 does not teach that the molded object may be coated on one side with an antistatic composition. However, Holley teaches an antistatic composition comprising a water-soluble polymer, a titanate, and an ammonium salt (abstract). The composition is coated on substrates (col 2, lines 47+) such as object utilized in the production of semiconductor electronics (col 1, lines 14+) in order to prevent damage that can be caused by static build-up (col 1, lines 27+). NOTE: the molded objects of Watanabe can be utilized in equipment to make semiconductors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the molded object taught in Watanabe '230 with the anti-static composition taught in Holley. The motivation

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for doing so would have been to prevent damage to semiconductor electronics that could come in contact with said object.

With regard to the claimed intermediate layer's chlorination degree of claim 1 and 2, the range taught in Watantabe'230 (50-57%) is just outside of the claimed range (58-73%). However, the courts have held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (MPEP 2144.05(R-1)). In the present case, the examiner takes the position that one of ordinary skill in the art would expect an intermediate layer having a chlorination degree of 57% (as anticipated by Watanabe'230) to have the same properties as an intermediate layer with a chlorination degree of 58%. Alternatively, Watanabe'230 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, chemical resistance, and moldability (paragraph 0015). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the chlorination degree of the intermediate layer taught in Watantabe'230. The motivation for doing so would have been to optimize the laminate's fire resistance, thermal stability, chemical resistance, and moldability.

With respect to the claimed intermediate layer's thickness of claim 17, the examiner takes the position that the teaching of Watanabe that the thickness of the intermediate layer may be "about 200um" anticipates the claimed thickness of "less than 200um" since "about 200um" is inclusive of thickness that are slightly less than 200um. With regard to the thickness of claim 22, Watanabe teaches

that the thickness of the intermediate layer affects the laminate's chemical resistance (0041). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the thickness of the intermediate layer. The motivation for doing so would have been to obtain the desired chemical resistance while reducing costs.

11. Claims 1, 2, 4, 17, 19, 20, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP11067945A (herein referred to as Watanabe'945) in view of Yoshizumi (US 4,431,764).

Watanabe'945 teaches a molded material consisting of a flame retardant vinyl chloride resin molded material. The molded material may comprise a substratum (herein understood to read on the claimed "base layer") and a surface layer (herein relied upon to read on the claimed "intermediate layer") on at least one side thereof (paragraph 0038). The substratum comprises 100pbw vinyl chloride based resin, 4-30pbw titanium oxide, and 1-10pbw of a molybdenum compound (paragraph 0038), wherein the vinyl chloride has a degree of chlorination between 58-73%(paragraph 0040). Said layer is taught to preferably have a thickness of 2-12mm (0045). The surface layer comprises 0-20pbw titanium oxide, 0-8pbw molybdenum compound, (abstract) and 100pbw vinyl chloride based resin. The vinyl chloride based resin preferably has a chlorination degree of 50-57% in order to improve the laminate's chemical resistance (paragraph 0025 of translation). The surface layer has a thickness of 200um or more (paragraph 0045). The molded material is utilized in semiconductor fabrication machines and equipment (paragraph 002).

Watanabe'945 does not teach that the molded object may be coated on one side with an antistatic composition. However, Yoshizumi teaches an antistatic coating composition comprising tin oxide (abstract) that is coated onto nonconductive coatings that need antistatic properties (col 1, lines 11+). The tin oxide is dispersed in a binder resin such as vinyl chloride or a thermosetting resin (col 2, lines 41+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the coating taught in Yoshizumi onto the substrate taught in Watanabe'945. The motivation for doing so would have been to provide the substrate with antistatic properties.

With respect to claim 19, Yoshizumi teaches that the binder of the anti-static layer may comprise vinyl chloride, but does not teach the claimed chlorination content of the vinyl chloride binder. However, Watanabe'945 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, and moldability (paragraph 0015). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the chlorination degree of the vinyl chloride binder. The motivation for doing so would have been to control the laminate's moldability, thermal stability, and fire resistance.

With regard to the claimed intermediate layer's chlorination degree of claim 1 and 2, the range taught in Watanabe'945 (50-57%) is just outside of the claimed range (58-73%). However, the courts have held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected

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them to have the same properties (MPEP 2144.05(R-1)). In the present case, the examiner takes the position that one of ordinary skill in the art would expect an intermediate layer having a chlorination degree of 57% (as anticipated by Watanabe'945) to have the same properties as an intermediate layer with a chlorination degree of 58%. Alternatively, Watanabe'945 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, chemical resistance, and moldability (paragraph 0015). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the chlorination degree of the intermediate layer taught in Watanabe'945. The motivation for doing so would have been to optimize the laminate's fire resistance, thermal stability, chemical resistance, and moldability.

12. Claims 1, 2, 4, 17, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP11067945A (herein referred to as Watanabe'945) in view of Holley (US 5,508,343).

Watanabe'945 teaches a molded material consisting of a flame retardant vinyl chloride resin molded material. The molded material may comprise a substratum (herein understood to read on the claimed "base layer") and a surface layer (herein relied upon to read on the claimed "intermediate layer") on at least one side thereof (paragraph 0038). The substratum comprises 100pbw vinyl chloride based resin, 4-30pbw titanium oxide, and 1-10pbw of a molybdenum compound (paragraph 0038), wherein the vinyl chloride has a degree of chlorination between 58-73%(paragraph 0040). Said layer is taught to preferably have a thickness of 2-12mm (0045). The surface layer comprises 0-

20pbw titanium oxide, 0-8pbw molybdenum compound, (abstract) and 100pbw vinyl chloride based resin. The vinyl chloride based resin preferably has a chlorination degree of 50-58% in order to improve the laminate's chemical resistance (paragraph 0025 of translation). The surface layer has a thickness of 200um or more (paragraph 0045). The molded material is utilized in semiconductor fabrication machines and equipment (paragraph 002).

Watanabe'945 does not teach that the molded object may be coated on one side with an antistatic composition. However, Holley teaches an antistatic composition comprising a water-soluble polymer, a titanate, and an ammonium salt (abstract). The composition is coated on substrates (col 2, lines 47+) such as object utilized in the production of semiconductor electronics (col 1, lines 14+) in order to prevent damage that can be caused by static build-up (col 1, lines 27+). NOTE: the molded objects of Watanabe can be utilized in equipment to make semiconductors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the molded object taught in Watanabe '945 with the anti-static composition taught in Holley. The motivation for doing so would have been to prevent damage to semiconductor electronics that could come in contact with said object.

With regard to the claimed intermediate layer's chlorination degree of claim 1 and 2, the range taught in Watanabe'945 (50-57%) is just outside of the claimed range (58-73%). However, the courts have held that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected

them to have the same properties (MPEP 2144.05(R-1)). In the present case, the examiner takes the position that one of ordinary skill in the art would expect an intermediate layer having a chlorination degree of 57% (as anticipated by Watanabe'945) to have the same properties as an intermediate layer with a chlorination degree of 58%. Alternatively, Watanabe'945 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, chemical resistance, and moldability. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the chlorination degree of the intermediate layer taught in Watanabe'945. The motivation for doing so would have been to optimize the laminate's fire resistance, thermal stability, chemical resistance, and moldability.

13. Claims 1, 2, 19, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP20001192520A (herein referred to as Watanabe'520) in view of Yoshizumi (US 4,431,764).

Watanabe'520 teaches a molded material consisting of a flame retardant vinyl chloride resin molded material. The molded material may comprise a substratum (herein understood to read on the claimed "base layer") and a surface layer (herein relied upon to read on the claimed "intermediate layer") on at least one side thereof (paragraph 0076-0077). The substratum comprises 100pbw vinyl chloride based resin, 5-50pbw titanium compound (0104-0112) wherein the vinyl chloride has a degree of chlorination less than 56% (paragraph 0076). Said layer is taught to preferably have a thickness of 2-12mm (0155). The surface layer comprises 0-30pbw titanium compound (0104-0112) and

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100pbw vinyl chloride based resin. The vinyl chloride based resin preferably has a chlorination degree of 58-73% (0077). The surface layer has a thickness of 400um or more (paragraph 0155). The molded material is utilized in semiconductor fabrication machines and equipment.

Watanabe'520 does not teach that the molded object may be coated on one side with an antistatic composition. However, Yoshizumi teaches an antistatic coating composition comprising tin oxide (abstract) that is coated onto nonconductive coatings that need antistatic properties (col 1, lines 11+). The tin oxide is dispersed in a binder resin such as vinyl chloride or a thermosetting resin (col 2, lines 41+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the coating taught in Yoshizumi onto the substrate taught in Watanabe'520. The motivation for doing so would have been to provide the substrate with antistatic properties.

With respect to claim 19, Yoshizumi teaches that the binder of the anti-static layer may comprise vinyl chloride, but does not teach the claimed chlorination content of the vinyl chloride binder. However, Watanabe'520 teaches that the chlorination degree of a polymer will affect its fire resistance, thermal stability, and moldability. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the chlorination degree of the vinyl chloride binder. The motivation for doing so would have been to control the laminate's moldability, thermal stability, and fire resistance.

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14. Claims 1, 2, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP20001192520A (herein referred to as Watanabe'520) in view of Holley (US 5,508,343).

Watanabe'520 teaches a molded material consisting of a flame retardant vinyl chloride resin molded material. The molded material may comprise a substratum (herein understood to read on the claimed "base layer") and a surface layer (herein relied upon to read on the claimed "intermediate layer") on at least one side thereof (paragraph 0076-0077). The substratum comprises 100pbw vinyl chloride based resin, 5-50pbw titanium compound (0104-0112) wherein the vinyl chloride has a degree of chlorination less than 56%(paragraph 0076). Said layer is taught to preferably have a thickness of 2-12mm (0155). The surface layer comprises 0-30pbw titanium compound (0104-0112) and 100pbw vinyl chloride based resin. The vinyl chloride based resin preferably has a chlorination degree of 58-73% (0077). The surface layer has a thickness of 400um or more (paragraph 0155). The molded material is utilized in semiconductor fabrication machines and equipment.

Watanabe'520 does not teach that the molded object may be coated on one side with an antistatic composition. However, Holley teaches an antistatic composition comprising a water-soluble polymer, a titanate, and an ammonium salt (abstract). The composition is coated on substrates (col 2, lines 47+) such as object utilized in the production of semiconductor electronics (col 1, lines 14+) in order to prevent damage that can be caused by static build-up (col 1, lines 27+). NOTE: the molded objects of Watanabe can be utilized in equipment to

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make semiconductors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the molded object taught in Watanabe '520 with the anti-static composition taught in Holley. The motivation for doing so would have been to prevent damage to semiconductor electronics that could come in contact with said object.

Response to Arguments

Applicant's arguments filed June 1, 2004 have been fully considered but they are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin R. Kruer
Patent Examiner-Art Unit 1773